

observatories of the southern hemisphere, where it is important for the theory of this body that observations should be continued as long as practicable. It was in perihelion on July 26. At the next return in 1881, its track in the heavens will be very favourable for observation in these latitudes.

THE SATELLITE OF NEPTUNE.—In the *Monthly Notices* of the Royal Astronomical Society for June, Mr. Marth has furnished data founded upon Prof. Newcomb's tables, from which the position of the satellite of Neptune may be readily determined for any time during the approaching opposition; but with the approximate times of superior and inferior conjunctions (the angles being 311° and 131° respectively) which are appended, the part of the orbit in which the satellite must be found is easily ascertained without calculation. As has been known since the year 1853, the orbital motion of the satellite is retrograde.

GEOGRAPHICAL NOTES

THE distinguished Italian traveller and naturalist, Sig. L. M. D'Albertis, who has been exploring different parts of New Guinea since 1872, and in 1876-77 made two expeditions into the interior of that country by the Fly River, has arrived in London with his large collections in every branch of natural history.

DR. VAN DER HORCK, who lately made so valuable a tour through Lapland to the Arctic Ocean, is at present organising in Berlin an expedition for the especial purpose of studying the question of the original settlement of America by Asiatics. It is intended that the expedition, which will last from three to four years, shall coast along the entire eastern shore of Asia, up to the Polar Sea, visiting all the chief islands by the way, and then, crossing at Behring's Straits, follow the American coast to San Francisco. The expedition will follow the customary programme of a scientific voyage, making surveys, dredging, collecting objects in natural history, &c. The anthropological features will, however, be the most important, and every effort will be put forth to collect and classify all existing clues to a distant emigration from Asia to America. It is hoped that evidences in this direction may be found on the isolated groups of islands in the more northerly regions. Ample funds have been put at the disposal of the expedition, and it starts under the auspices of the German government and the Berlin Geographical Society.

THE services of the scientific element in the recent Berlin Congress have been recognised by Her Majesty's conferring the honour of knighthood on Mr. Edward Hertset, C.B., F.R.G.S., Librarian of the Foreign Office and Keeper of the Archives, who perhaps had as much to do with the settling of the boundaries of the new states as the Prime Minister himself.

THE United States Coast Survey steamer *Blake*, which returned some weeks ago from dredging operations in the Gulf of Mexico, is now refitting for another expedition in November. Capt. Patterson, of the Coast Survey, we learn from the *Tribune*, says that the extensive and accurate soundings of the Gulf taken by improved scientific methods in the recent expedition, do not tend to confirm the belief, long held, that the equatorial current, after rushing from the Caribbean Sea through the channel formed by the West India Islands and the northward projection of Yucatan, makes the whole tortuous circuit of the Gulf close by the shores of Central America, Mexico, and the southern coast of the United States, before emerging into the Atlantic between the point of Florida and the Bahamas. The observations tend rather to prove that the force of the incoming equatorial stream expends itself in one direction against the mass of the Gulf long before it reaches the Texas coast, and then

turns directly toward and reissues into the ocean. The old theory in regard to the current being unsettled, the expedition now to be made will proceed to repeat certain experiments, and to make others, with the view of either confirming or destroying the latter hypothesis. Exhaustive observations will be made of the region of ocean in and around the eastward islands of the Caribbean Sea, through which the equatorial current makes its entrance, as through a sieve, from the Atlantic into the long channel, 1,500 miles long, formed by the West Indies on the one side and Central and South America on the other, and leading to the Gulf of Mexico. From the experiments and observations of this expedition Capt. Patterson hopes for results which will go far toward laying at rest all merely speculative theories relating to the Gulf Stream. In connection with the investigations hitherto conducted by the Coast Survey expeditions in the Gulf of Mexico, it has been ascertained that the vast current of water pouring from the Gulf into the Atlantic, through the Florida and Bahama gate, has neither the same velocity nor the same temperature. It is believed by Capt. Patterson and his associates that further attention to this curious fact may develop results having an important bearing upon the science of climate and meteorology, making predictions possible as to changes in the seasons of the European countries affected by the Gulf Stream from the observed quantity and temperature of the flow through the Florida Straits.

THE Paris Geographical Society has recently received some interesting intelligence respecting M. Savorgnan de Brazza's explorations on the upper part of the River Ogowe, in Western Equatorial Africa. Having learned from the natives at Dumé that there were some falls on the Ogowe, in the Aduma country, he got together with some difficulty a party to show him their locality. On the way up the river the inhabitants fled from their approach, as they believed that white men brought small-pox with them. On the fourth day the expedition encountered the first rapids on the Ogowe after leaving Dumé; they became more and more numerous, and the breadth of the river diminished considerably. Further on sand-banks extended across the river, which became a succession of rapids in the country of the Atzianas. Among the Akanigues, higher up, the villages are described as very numerous and close together, and the country well cultivated and mountainous; the inhabitants collected on the banks to see the expedition pass. On the tenth day the explorers arrived at the River Passa, which has a strong current, and which is nearly as important as the Ogowe, there become comparatively narrow. On the following day they found themselves face to face with a large sand-bank and a strong rapid, which their guides declared to be impassable. Dr. Ballay, one of the party, went by land to Pubava, some twelve miles above the rapids, and found that the Ogowe is not more than twenty metres broad above the falls; he thinks that the River Passa will probably furnish a more convenient route to the eastward than the Ogowe.

As might be expected, Petermann's *Mittheilungen* for August is largely devoted to papers bearing on the recent changes in the East. First we have an article, written before the conclusion of the Berlin Congress, on the territory claimed by Russia from Turkey in Asia. Next comes an important study on the Kara Kum desert, with reference to the proposed Central Asiatic railway. Following this is a series of tables of population statistics on the Sanjak of Seres, in Macedonia. There is also an important paper on Herero Land, in South Africa, to accompany a new map of the region, based on the observations of the Rhenish missionaries, especially those of Herren Böhm and Bernsmann. The number concludes, as usual, with Dr. Behm's admirable monthly summary. Besides the map of Herero Land, there are maps of Armenia, to show the region claimed by Russia, and of

the south-east of Europe and Turkey-in-Asia, as re-adjusted by the Berlin Congress.

THE Buenos Ayres *Standard* furnishes some particulars of interest concerning Don Francisco P. Moreno's explorations in Southern Patagonia. The River Gallegos, it appears, has a mean velocity of four to five miles an hour, and is fed by the snows which fall in winter on the volcanic lands. It has two sources, which unite after a short distance, and two small tributaries to the south. The valley could be utilised for agriculture; on both banks mounds of lava are met with towards the south, forming black rocks with broken fragments like columns, wearing an appearance of an ancient city in ruins. All these peaks as far as Cape Virgin are extinguished volcanoes, of an average height of 860 feet. Don F. Moreno believes these eruptions to have been entirely independent of the Andine volcanoes. Between Gallegos and the banks of the San Gregorio, where these peaks are found, they have risen more irregularly than in other parts of Patagonia. The road winds capriciously through low valleys, watered by pools and rivulets, then through sterile tracts, and now and again over grassy elevations. At the confines of the Meseta (table-land) the face of the country changes. To the right the blue and white line of the snow-clad mountains stands out in relief. To the left is seen the summit of San Gregorio, then the narrow Straits, and further off the Fuegian Plains, enveloped in fog and lurid fires. At the Brunswick Peninsula on the Straits the landscape is particularly verdant and undulating, with mineral veins here and there and small woods of the "Calafate" (*Berberis*), which produces a delicious fruit. With regard to the climate of these southern regions, in the western part rain and storms are continual, and it would be difficult to populate it, but on the east the climate is more favourable, and those sudden and terrible atmospheric changes that cause so many shipwrecks are unknown. Don F. Moreno is of opinion that the climate from the River Santa Cruz to Cape Horn may fairly be compared to that of Great Britain, from the English Channel to the north of Scotland. On the high lands it is dry, with night dews, but little rain. In winter snow falls, but in spring, summer, and autumn, the climate is delightful, with some few days of intense heat.

THE new part of *Appalachia*, the journal of the Appalachian Mountain Club, contains Prof. Scudder's presidential address, an exhaustive summary of the various North American surveys, and explorations during the previous years. There are other valuable papers connected with the exploration of the Appalachians; one by Prof. C. H. Hitchcock gives an account of a large number of glacial markings in the White Mountains.

A WORK of great interest is now in course of publication at Vienna (Hartleben): "Die Sahara—von Oase zu Oase," by Dr. Joseph Chavanne. Up to this date twelve parts have appeared; they give excellent descriptions of the great African desert itself and of the tribes frequenting it. The scientific materials are worked out into attractive pictures with considerable skill; the reader travels in thought through the Oasis of Ziban, then makes the acquaintance of Biskra and its people, the so-called Paris of the desert, passing across the El Arnat and through the land of the Beni Mزاب as far as In Salah and Taflet. Numerous well-drawn illustrations add considerably to the attractions of the work.

A NEW book of special interest at the present time has just been published by Cotta, of Stuttgart. Its title is "Cypern, Reiseberichte und Landschaft, Volk und Geschichte." The author is Herr Franz von Locher.

LETTERS have been received in Holland from Vardö, reporting that every one on board the *Wilhelm Barentz*, the schooner of the Dutch Arctic Expedition, was in excellent health, and that hitherto the vessel had behaved admirably.

ON PREHISTORIC REMAINS IN BRUNSWICK¹

A LARGE quantity of prehistoric remains have been found in the diluvial loam of Thiede and Westeregeln, in the Duchy of Brunswick. This fossil fauna of Thiede numbers about thirty species—the common loess molluscs (*Helix hispida*, *Pupa muscorum*, *Succinea oblonga*), together with remains of horse, reindeer, *Rhinoceros tichorinus*, *Elephas primigenius*, some carnivora, and rodents (as lemming, *Myodes torquatus*, *Arvicola gregalis*, &c.). The lemmings appear especially in the lowermost beds, with some few remains of reindeer and Arctic fox; in the middle beds they are associated with remains of horse, rhinoceros, and elephant, and gradually disappear in the higher horizons.

The fossil fauna at Westeregeln, numbering more than thirty species of mammals alone, is far more abundant and more varied. The mammals are bat, shrew, hyena, lion, wolf, Arctic fox, bear, badger, and especially rodents, all of them (the hare excepted), such as habitually live in holes underground, in steppe-like regions. Among them is *Arctomys bobak*. The remains of *Spermophilus altaicus*, of *Dipus*, and of several species of *Arvicola*, are extremely abundant. Lemming, hare, and lagomys are also met with. The presence of horse, reindeer, bos, and antelope has been ascertained, together with some few bones of *Elephas primigenius* and *Rhinoceros merki*. A well-developed trapezium of a peculiar horse may be possibly interpreted as a connecting form between *Equus* and *Hipparion*. The dental system of *Spermophilus* offers likewise some remarkable particularities. The birds are represented by eleven species—ducks, *Gallinacea*, pigeon, lark, bustard, vulture, and largely by species of *Fringilla* and *Hirundo*. Remains of batrachians (*Bufo*, *Rana*, and *Hyla*) abound in certain localities. Of fishes only one-half of a pike's lower jaw has been met with. The number of molluscous species amounts to seven. The co-existence of insects may be inferred from the presence of many insectivorous mammals and birds.

Man's co-existence is attested at Thiede by axes of the stone period, found immediately beneath the humus; also by flint implements, and traces of fire-places in the lower beds of the loess. At Westeregeln splinters of flint, small fragments of charcoal, and broken bones of animals, indicate the presence of human beings, either permanent or occasional, during hunting excursions. According to Mr. A. Nehring, the discoverer of these deposits, their fauna approximates to the Steppe fauna of south-west Siberia, and is co-eval with the post-glacial period, when Northern Europe had an extreme continental climate. In the neolithic period, this fauna, as indicated by the remains of deer, bear, and beaver, assumed a sylvan character, persisting down to the times of Cæsar and Tacitus.

Mr. Nehring supposes the loam in question to have been transported and deposited by water, admitting, however, the occasional transport of materials by storm winds. Dr. Tietze thinks that the presence of fishes and batrachians offers no objection to the sub-aerial, or wind-origin, of this loess, as fishes, frogs, lizards, and tortoises, live on the steppes of Persia, and are even characteristic of their fauna; and fishes are also found in the artesian wells of the Sahara. Some known facts support the idea of the sub-aërial origin of deposits in localities having nothing in common with steppes. In 1866, the wind blowing from the south, the snow was covered with a stratum of yellow dust; the same phenomenon was observed at Kasan in 1872. Mr. D. Stur ascribes to the action of winds the recent thin layers of quartzose and micaceous particles accumulated on the slopes of the limestone Alps.

¹ By M. A. Nehring and Dr. Tietze. (*Proc. Imper. Geol. Instit., Vienna* March 5, 1873.)